Electronic Version
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Claims

[c1] What is claimed is:

1.A method for stereo vocal cancellation, the method outputting a first output signal and a second output signal according to a first stereo signal of a first stereo channel and a second stereo signal of a second stereo channel respectively; the method comprising:

generating a mono signal according to a sum of the first stereo signal and the second stereo signal;

high pass filtering the first stereo signal to generate a corresponding first high pass signal according to a high-frequency band, the frequency of the first high pass signal being substantially concentrated on the high-frequency band;

high pass filtering the second stereo signal to generate a corresponding second high pass signal according to the high-frequency band, the frequency of the second high pass signal being substantially concentrated on the high-frequency band;

generating a first intermediate signal according to a difference between the first stereo signal and the mono signal;

generating a second intermediate signal according to a

difference between the second stereo signal and the mono signal;

mixing the first intermediate signal and the first high pass signal to generate the first output signal; and

mixing the second intermediate signal and the second high pass signal to generate the second output signal;

wherein the first output signal and the second output signal have substantial differences outside the high-frequency band.

[c2] 2.The method of claim 1 further comprising:

generating a low pass signal according to a low-frequency band, the frequency of the low pass signal being substantially concentrated on the low-frequency band;

wherein when generating the first output signal, further mixing the low pass signal with the first intermediate signal and the first high pass signal; and when generating the second output signal, further mixing the low pass signal with the second intermediate signal and the second high pass signal

3.The method of claim 2 wherein the low pass signal is generated according to the low-frequency band, the low pass signal being generated by low pass filtering the first stereo signal or the second stereo signal according to the low-frequency band.

[c3] 4.The method of claim 2 wherein the low pass signal is generated according to the low-frequency band, the low pass signal being generated by low pass filtering the mono signal according to the low-frequency band.

[c4] 5.The method of claim 2 wherein the bandwidth of the high-frequency band is substantially larger than the bandwidth of the low-frequency band.

[c5] 6.The method of claim 5 wherein the bandwidth of the high-frequency band is not substantially overlapping the bandwidth of the low-frequency band.

[c6] 7.The method of claim 2 wherein the bandwidth of the low-frequency band is lower than the bandwidth of a vocal track of the first or second stereo signal.

[c7] 8.The method of claim 1 wherein the bandwidth of the high-frequency band is higher than the bandwidth of a vocal track of the first or second stereo signal.

[c8] 9.A player comprising:
a sound source circuit for providing a first stereo signal of a first stereo channel and a second stereo signal of a second stereo channel; and
a signal module for performing vocal cancellation on the first stereo signal and the second stereo signal and gen-

erating a first output signal and a second output signal respectively; the signal module comprising:

a mono process module for generating a mono signal according to a sum of the first stereo signal and the second stereo signal;

a first high pass module for high pass filtering the first stereo signal according to a high-frequency band to generate a corresponding first high pass signal, the frequency of the first high pass signal being substantially concentrated on the high-frequency band;

a second high pass module for high pass filtering the second stereo signal according to the high-frequency band to generate a corresponding second high pass signal, the frequency of the second high pass signal being substantially concentrated on the high-frequency band;

a first vocal cancellation module for generating a first intermediate signal according to a difference between the first stereo signal and the mono signal;

a second vocal cancellation module for generating a second intermediate signal according to a difference between the second stereo signal and the mono signal;

a first mixing unit for generating the first output signal by mixing the first intermediate signal and the first high pass signal; and

a second mixing unit for generating the second output signal by mixing the second intermediate signal and the

second high pass signal;
wherein the first output signal and the second output signal have substantial differences outside the high-frequency band.

[c9] 10.The player of claim 9 further comprising:
a low pass module for generating a low pass signal according to a low-frequency band, the frequency of the low pass signal being substantially concentrated on the low-frequency band;
wherein the first mixing unit is for mixing the first intermediate signal, the first high pass signal, and the low pass signal to generate the first output signal; and the second mixing unit is for mixing the second intermediate signal, the second high pass signal, and the low pass signal to generate the second output signal.

[c10] 11.The player of claim 10 wherein the low pass module low pass filters the first stereo signal or the second stereo signal according to the low-frequency band to generate the low pass signal.

[c11] 12.The player of claim 10 wherein the low pass module low pass filters the mono signal according to the low-frequency band to generate the low pass signal.

[c12] 13.The player of claim 10 wherein the bandwidth of the

high-frequency band is substantially larger than the bandwidth of the low-frequency band.

[c13] 14.The player of claim 13 wherein the bandwidth of the high-frequency band is not substantially overlapping the bandwidth of the low-frequency band.

[c14] 15.The player of claim 10 wherein the bandwidth of the low-frequency band is lower than the bandwidth of a vocal track of the first or second stereo signal.

[c15] 16.The player of claim 9 wherein the bandwidth of the high-frequency band is higher than the bandwidth of a vocal track of the first or second stereo signal.

[c16] 17.The player of claim 9 wherein the sound source circuit reads signals of a CD to form the first stereo signal and the second stereo signal.

[c17] 18.The player of claim 9 further comprising:
a first speaker module for transforming the first output signal to acoustic waves; and
a second speaker module for transforming the second output signal to acoustic waves.